Claims:

1. Process for producing a fibrous composition, which contains a first component which comprises vegetable fibres and a second component that consists of a synthetic, electrically conductive polymer, according to which method:

- the vegetable fibres comprise porous, loose and separate fibres, and
- the electrically conductive polymer used is an independently electrically conductive polymer which has been doped in order to generate charge carriers in the polymeric material, and
- the synthetic polymer is produced by *in situ* -polymerization within the fibres and on their surfaces, and

whereby the electrically conductive polymers are attached so firmly to the fibres that they cannot substantially be washed out by water,

c h a r a c t e r i z e d by using as a doping agent an organic sulphonic acid, which is allowed to absorb into fibres in an aqueous medium, and then a monomer corresponding to the polymer is brought into contact with the fibres and polymerized.

2. The process according to claim 1, c h a r a c t e r i z e d in that the monomer and the doping agent of the polymer are allowed to absorb into fibres to form a salt or a complex, after which this salt or complex is polymerized by adding a polymer catalyst and, when needed, by increasing the temperature.

3. The process according to claim 1 or 2, c h a r a c t e r i z e d by using for doping an aromatic sulphonic acid with one aromatic ring or two fused rings, at least one of the rings optionally carrying a polar or a nonpolar substituent.

4. The process according to claim 3, c h a r a c t e r i z e d by using for doping an aromatic sulphonic acid, which contains a functionalized group or an alkyl chain with 1 – 20 carbons in at least one ring.

5. The process according to any of claims 1 to 4, c h a r a c t e r i z e d by increasing the mutual affinity between the porous fibres and the electrically conductive polymer by forming, adjacent to each other, aliphatic hydrocarbon structures and aromatic hydrocarbon

structures on the bonding surfaces between the fibres and the electrically conductive polymer.

6. The process according to claim 5, c h a r a c t e r i z e d by increasing the affinity of the porous fibres and the electrically conductive polymer towards mutual bonding by selecting fibres whose surface is at least partially covered by lignin.

7. The process according to claim 5, c h a r a c t e r i z e d by increasing the affinity of the porous fibres and the electrically conductive polymer towards mutual bonding by using doped polyaniline, whose counter-ion contains aromatic hydrocarbon groups, as an electrically conductive polymer.

8. The process according to claim 5, c h a r a c t e r i z e d by increasing the affinity of the porous fibres and the electrically conductive polymer towards mutual binding by carrying out the polymerization reaction of the electrically conductive polymer in an aqueous medium, which contains porous fibres, so as to attach the polymer formed through polymerization to the porous fibres.

9. The process according to any of claims 1 to 8, c h a r a c t e r i z e d by using doping agents soluble in the medium for attaching the polymer to fibres consisting of chemical cellulosic pulp.

10. The process according to any of claims 1 to 9, c h a r a c t e r i z e d by producing a fibre composition, where a maximum of 10 weight-%, preferably a maximum of 5 weight-% of the electrically conductive polymer attached to fibres is out-washable by water at a pH value of 7 $\pm$ 0.3 and at a temperature of 25 °C.

11. The process according to any of claims 1 to 10, c h a r a c t e r i z e d in that the porous fibres comprise separate and loose fibres.

12. The process according to any of claims 1 to 11, c h a r a c t e r i z e d in that the pH of the aqueous phase is from 2 to 3 in presence of an organic counter-ion or a doping agent capable of bringing the formed polymer into conductive form.

13. The process according to any of claims 1 to 12, c h a r a c t e r i z e d in that the fibre mixture is recovered from the aqueous phase and dried.

14. The process according to any of claims 1 to 13, c h a r a c t e r i z e d in that the fibre mixture is used for the production of paper or cardboard without intermediate drying.

15. The process according to any of claims 1 to 14, c h a r a c t e r i z e d in that polyaniline is attached to fibres composed of chemical cellulosic pulp by first dissolving a doping agent which is selected from para-toluene sulphonic acid, phenol sulphonic acid and camphor sulphonic acid, in an aqueous phase, and then by adding fibres to this to form a fibre suspension, by mixing aniline to the fibre suspension to form a salt of aniline and the doping agent, and by adding a polymer catalyst and by raising the temperature of the suspension to produce polyaniline and to attach it to the fibres.

16. The process according to any of claims 1 – 15, c h a r a c t e r i z e d in that polyaniline is attached to fibres composed of mechanical cellulosic wood pulp by first dispersing dodecyl benzene sulphonic acid as a doping agent into an aqueous phase and, then, by adding fibres to this to form a fibre suspension, and by adding aniline to the fibre suspension to form a salt of aniline and the doping agent, followed by the addition of a polymer catalyst, and by raising the temperature of the suspension to produce polyaniline and to attach it to the fibres.